NIC 18253

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    A        RRRR      PPPP        A       N    N   EEEE   TTTTT
   A A       R   R     P    P     A A      NN   N   E        T
  A   A      RRRR      PPPP      A   A     N  N N   EEE      T
 A A A A     R   R     P        A A A A    N   NN   E        T
 A     A     R     R   P        A     A    N    N   EEEE     T

             N   N   EEEE   W      W   SSSS
             NN  N   E      W      W   S
             N N N   EEE    W   W  W   SSSS
             N  NN   E      W W W  W      S
             N   N   EEEE    WW WW     SSSS
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Issue 6

August 1973

ARPA Network Information Center
Stanford Research Institute
Menlo Park, Calif. 94303

ARPANET NEWS The Monthly Online/Hardcopy ARPANET Newsmagazine

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Mil E. Jernigan (NIC)

The online version is sent to all Network members who receive online delivery from NIC. It can also be accessed by anyone who logs into SRI-ARC and uses the query language named NIC.

The online version contains the month's basic issue. Each week a branch is added, containing items received during the week. This update material is added to the new feature articles to produce the next month's issue.

For scanning on TTY:

```
control c
nic  CR
a/rpanet news/  CR
s/how/  (whatever you choose from the contents)  CR
(to stop printing) control o   (to exit) q/uit/  CR
(to show statement numbers) v/:type View specs:/ mG  CR
```

For printing NEWS:

```
nls  CR
l/oad/ f/ile/ <nic>arpanewscover  CR CR (for cover, masthead)
       or
l/oad/ f/ile/ <nic>arpanews  CR CR (for NEWS contents)
       or
l/oad/ f/ile/ <nic>arpanewsup  CR CR (for UPDATES only)
o/utput d/evice t/eletype/  CR
```

One hardcopy of the monthly issue will be sent to each Liaison, Principal Investigator, and Station Agent at Network Sites, and to Network Associates. Local reproduction is encouraged.

Contributions to the NEWS may be forwarded to JI at NIC through the Journal, to ISELI@USC-ISI, or to Jean Iseli, The MITRE Corporation, National Systems Design Dept. Westgate Research Park, McLean, Va. 22101. News may also be forwarded to JBN through the NIC Journal, or mailed to Jeanne North at SRI.

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May 1972 - May 1973

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CALENDAR   Events of Network Interest 3

Schedule 3a

*8/20-24	SU-AI-CON	Online Demos
10/1-3	ACM-PROGLANG	ACM Symp on Programming Languages
10/15-17	IEEE	
10/21-25	ASIS	ASIS-73 Annual Meeting
11/5-7	IEEE-SYS	Conference on Systems, Man & Cybernetics
11/7-8	ARCH	Symp on High Level Language Computer Arch
11/12-13	TEXAS	2nd Texas Conf on Computing Systems
11/13-15	DATA-SYMP	
1/8-10 74	HAWAII-CON	
5/6-10 74	NCC	1974 National Computer Conference

A meeting listed here is sponsored by the Group named. Many meetings are open to other interested people. NIC document references are given where available.

3b

Meetings sponsored by Groups in the Network are indicated by *

3c

Seventh Hawaii International Conference on System Sciences, and Subconference on Computer Nets

3d

The University of Hawaii, Department of Electrical Engineering and Department of Information and Computer Sciences, announces the: Seventh Hawaii International Conference on System Sciences and a special subconference on COMPUTER NETS, Honolulu, Hawaii, January 8, 9, 10, 1974.

The conference will broadly encompass the following areas: Information Sciences, Computer Sciences, Communication Theory, Control Theory, and System Theory. The Computer Net subconference will include: Computer Nets, Satellite Communications, and Computer Communications. A major feature of the subconference will be to lay the groundwork for a Pacific Education Computer Network.

Authors are encouraged to present preliminary results of their research. Three copies of a one page, single-spaced abstract must be submitted by SEPTEMBER 1, 1973. Authors will be notified of acceptance before October 15, 1973. The length of each summary will be limited to three pages, including figures. Please mail abstracts to:

HICSS-7
Department of Electrical Engineering
University of Hawaii
2540 Dole Street
Holmes Hall, Room 485
Honolulu, Hawaii 96822
........Extracted from Announcement, by JI

CATEGORIES OF CONCERN

4d

The meeting began by attempting to create a relatively complete list of topics directly relevant to users. The intention was to then discuss some of these categories in detail. The categories of concern to users are listed here along with a brief outline of the discussion and recommendations associated with each category. Not all topics were discussed fully due to time limitations. It was acknowledged that some of the recommendations were quite extensive, but that they should be mentioned even though their implementation would be far off.

2. Online and Offline Documentation, Information Sharing, and Consulting

   a. There is a general need to upgrade the quality, technical accuracy, timeliness, dissemination, and format of both online and offline documentation.

   b. Documentation should avoid "buzz" words (jargon), and should follow easily understood syntax conventions, abbreviation standards, reference citation rules, etc. However, there probably cannot be a standard format for documentation.

   c. Offline documentation should be well indexed, should contain a good table-of-contents, and should be written in an easily browsable format. Online documentation should be presented in a browse mode with well-labeled categories of information as well as a keyword search capability.

   d. Documentation should be identified with date/author/version information, particularly in large online documents, so that it is easier to keep the most current version of a document and to query the author, in the event of problems with the documentation.

   e. Network news needs to be gathered and intelligently distributed to users (Network PR).

   f. Users need several levels and styles of access to documentation, whether online or offline, based upon their experience, interests, and preferences.

   g. Each server site should also provide some degree of information variety in online "help" mechanisms, tailored to fit the needs and experience of different user types.

      In addition, entering "Help" from the EXEC level of a system should direct a user to ALL procedural-type information.

   h. New users should be carefully introduced to the Network by way of a New Users Packet (NUP). Since the MITRE-TIP group is the official contact for new users, they should design such a packet and incorporate suggestions from USING.

ARTICLES

ARPANET USERS INTEREST GROUP MEETING

---- D. Crocker, N. Neigus
J. Feinler, J. Iseli

4

A new group, the Arpanet Users Interest Group (USING) is the outgrowth of a meeting held in Boston on May 22-23, 1973. The meeting, cochaired by Dave Crocker, UCLA-NMC, and Nancy Neigus, BBN, followed BBN's Resource Sharing Workshop. 4a

PURPOSE 4b

The USING meeting was seen by the members as a forum for Network users to air complaints, exchange information, voice desires, and present concrete proposals for the design and implementation of user-oriented Network capabilities.

The group will devote itself to lobbying on behalf of user interests, to promoting and facilitating resource sharing, to improving user interfaces (support), and to studies of standardization. The ultimate goal will be to provide users identification of, and facilitated access to, whatever resources on the Network they might wish to use.

Neigus, Crocker, and Iseli of MITRE were selected to define the objectives and goals of USING in more detail, and they will present their discussion in a later publication.

ATTENDEES 4c

Dave Crocker, UCLA-NMC, Co-Chairperson
Nancy Neigus, BBN, Co-Chairperson
Ken Bowles, UCSD-CC
Frank Brignoli, NSRDC
Jim Calvin, CASE-10
Jake Feinler, NIC
Wayne Hathaway, NASA-AMES
Jean Iseli, MITRE
Mike Kudlick, NIC
Mike Padlipsky, MIT-MULTICS
Lee Richardson, USC-ISI
Ron Stoughton, UCSB
Jim White, NIC
Steve Wolf, UCLA-CCN
Joe Wyatt, Harvard

This packet should eventually contain, among other things:

a definition of, and introduction to the Network;

a list of sites;

step-by-step scenarios for accessing functional documents and related online items;

a definition of who can get on the Network;

some quick-reference charts showing a list of Network services available to new users;

and an introduction to Network groups, including USING, as well as the names of Network consultants, assistants, and the like.

i. Information-accessing mechanisms should be provided for users, including interactive tutorials, user scenarios, and other training mechanisms.

j. A Network-wide "who, what, where and when" information system should be implemented. (This was nicknamed the Network Yellow Pages.) Discussion of support for such a system focused on obtaining some form of central funding.

k. The concept of 'Regional Agents' for collecting information for the Resource Notebook was discussed.

Several felt that what was really needed was a 'rebirth' of the original concept of Technical Liaison as the person who provides information to the NIC and technical assistance to users.

There was concern voiced about the number of people collecting information and the redundancy of the requests received by sites.

There was also concern about what incentives there are (or should be or can be) for Liaisons to perform their tasks adequately by providing truly up-to-date and complete information (carrot vs. stick).

l. Server Sites should provide a variety of consulting services to supplement 'help' and general information services. Consultants could represent the whole Network, a group of sites, a single site, general areas such as software, or specific applications processes. This could fit into the workings of the Network Servers Group.

3. Standardization for the User

   a. If they so desire, users should only have to learn one Executive (command) language, rather than 20. Rather than have every site change its interface to the user, it was suggested that there be a Network Common Command Language Protocol which is translated to/from the host's own Executive command language.

   As with FTP and RJE, a human user should be able to type in CCL Protocol directly, though many sites may want to allow a local user to type in their local Executive language, and then they will tranlate it into CCLP, for the foreign host.

   Any Network Common Command Language should be compatible with batch systems as well as wtH INTERACTIVE SYSTEMS, and should provide an effective means for batch job submission and control.

   Bowles, Hathaway, and Stoughton volunteered to outline specs for a Network command language that would be compatible with ideas suggested by Padlipsky and discussed at the meeting.

   One of the functions to be included in a Common Command Language is a simple editor. which Padlipsky has outlined. The editor should be easy for users to learn as well as for servers to implement or interface to with their own editors.

4. Status/Measurement of Site Performance

   a. A variety of performance measures, for the individual sites, needs to be derived, acquired, maintained, and made available to users.

   This could include some attempt to measure average "response time", relative costs (relative to type of task, that is), availability/reliability, etc.

   b. Mechanisms are needed for software certification and for measuring and verifying the accuracy and/or reliability of systems, hardware, protocols, applications software, etc.

5. User Feedback Mechanisms

   a. There is a need for a uniform Network gripe/suggestion mechanism. This should cover several types of gripes, including program bugs and service complaints.

   b. Each user registering a complaint deserves immediate acknowledgement and some indication of what, if any, action will be taken.

c. The NIC should set up Network ident groups for Principal Investigators, Liaisons, Station Agents, Accounts Administrators, Consultants, etc., so that users can easily direct their comments, inquiries and mail to these groups.

d. A Network Servers Group should be started, to coordinate the activities (to the extent possible) of the servers (a Server's Cartel?). It would also provide a focus for user complaints and suggestions.

(The Group was originally dubbed the "Tobacco Institute". The Tobacco Institute acts as a representative for the disparate tobacco companies, and attempts to convince the public that smoking is good for them.)

The point of the Servers Group -- rather than trying to convince the Network public that servers are good for them -- would be for servers to help each other with common tasks (such as documentation) that are too big for each to handle alone.

This eventually works in the users interest, because the servers (in the Network free-market economy) are dependent upon the users for their livelihood.

There should be cooperation between the Server Group and USING, but the groups would NOT be comprised of the same people. They are on opposite sides of the product.

e. Station Agents should supply users with information of a clerical nature such as names, phone numbers, titles, documentation, etc. To be able to do this, the Agents must first HAVE this information.

6. Messages to Users

a. Messages to users, such as error messages or diagnostics, should be simple, clear, and meaningful to users.

b. The user should have the ability to control notifications given to him, by being able to queue messages or refuse them.

c. Users should be able to suppress diagnostics or to specify abbreviated or expanded versions.

7. Tailoring of Resources for Users

a. Interfaces to users should support different levels of user proficiency, without being a burden to the more proficient user.

That is, a new user needs more prompting, etc. A more experienced user does not need and DOES NOT WANT such prompting. So the capabilities of the interface, which are not needed by a specific user, should be transparent.

b. A method for work flow management that permits a user to set up a sequence of computer tasks that are contingent upon one another is needed. The user should be able to describe this sequence interactively and then be able to detach and continue with other work while the sequence of tasks is being carried out.

8. Personal Information Management System

a. Users need a system for managing all types of machine-based contacts such as mail, links, journal items, etc.

Such a system should 'log' what has been received and allow the user to keep a copy, if desired.

It should also provide the user with options for organizing his personal information.

b. A personal 'calendar' or reminder system would be handy, especially if it allowed one to look ahead to coming events as well as to check events for the current day or week.

c. A 'return to sender' feature is needed in the Network-wide mail address system.

d. (Discussion of the current work on the Mail Protocol indicated that some of these ideas are already being considered)

9. Uniform Accounting Procedures and Online Status of Accounts

a. This topic was covered in detail by sections of the Resource Sharing Workshop. It is mentioned here only because it is a problem of real concern to users.

10. Trial Usage and Browsing

a. Ideally, users should be allowed some 'free' sampling of systems and features available at each site. Practically, this presents problems of space allocation, accounting, consulting, etc. Although none of these problems are easy to solve equitably, an attempt should still be made to provide some free usage to everyone.

b. Several types of trial usage should be considered, such as for those who will make an immediate commitment, those who will make a gradually increasing commitment; and those who wish merely to sample, without making any commitment.

11. Prelogon Facilities

    a. Some facilities should be available as prelogon facilities, so that any user can access them whether or not he has an account, directory, etc., at a given site. Some sites will not be able to support many of these functions, so a required set must be kept to a minimum.

12. Remote User Facilitation

    a. Users not only need help with actual use of systems from a remote site, but they also need facilitation of administrative tasks. Station Agents should be able to handle most of these problems or transfer the user to the proper person. System access requirements, account and billing problems, and document acquisition need particular attention.

    b. There should be a simple mechanism for users to acquire/update information in functional documents such as the Resource Notebook and in files such as identification files. Publications or files of this sort should combine the collective input of all the users.

13. Transportability of Resources and Information

    a. Users should be able to easily transfer information, such as files, memos, mail, online documentation, (programs?!?) etc., from one site to another.

14. Network Utilities

    a. Should distributed data banks and similar features be considered Network utilities that can be used by all?

    The idea of "Network Utilities" was recognized as an interesting one by the group, but there was little agreement as to what constitutes Network utilities or how they should be supported.

CURRENT PLANS 4e

1. Neigus, Crocker, and Iseli will draft the scope, objectives, goals, and priorities of USING and will submit their recommendations for approval by the members.

2. MITRE will design a New User's Packet incorporating ideas from USING.

3. Bowles, Hathaway, and Stoughton will write preliminary specs for a Network Common Command Language Protocol. All members should suggest a list of commands for Consideraton.

4. Padlipsky will produce specifications for a simple, standard editor (NETED) which could easily be implemented by server hosts.

5. A general Users Group (NIC ident = USERS) will be formed, to allow any interested person to monitor user-oriented activities, especially those of USING. Anyone interested in being in USERS should contact Dave Crocker (DHC).

6. Activities of the group will be reported in the ARPANET NEWS, and a user's forum column will be made available for user's comments. [Section 10 FORUM is the place provided --Eds.]

7. The group will meet again in the Fall of 1973 at the Network Information Center in Menlo Park, California.

FEATURED SITE USC-ISI INFORMATION SCIENCES INSTITUTE

......Extracted from ISI/SR-73-1, "Annual Technical Report,"
May 1972 - May 1973 by JI 5

BACKGROUND 5a

The Information Sciences Institute (ISI), a research unit of the University of Southern California's School of Engineering, was formed in May 1972 to do research in the fields of computer and comunications sciences with an emphasis on systems and applications. The Institute, located off-campus, has sufficient autonomy within the University structure to assure it the freedom required to identify and engage in significant research programs.

At the end of the first year of operation, ISI's full-time professional research staff numbers 25. Total project support at ISI, including full-time staff, participating faculty and graduate students, and support personnel, is currently at 60 people.

A close relationship is maintained with USC academic programs through active cooperation between ISI, the School of Engineering, the Department of Electrical Engineering, and the Computer Sciences Program. Ph.D. thesis supervision is an integral part of ISI programs. Also, participating faculty and graduate students from other departments provide the interdisciplinary capabilities for Institute projects.

ISI has five major projects supporting ARPA/IPT research areas. The projects include the following elements:

PROGRAMMING RESEARCH INSTRUMENT 5b

Development and exploration of time-shared microprogramming facilities to service, via the ARPANET, language processing, emulation, and special functional needs.

The PRIM project will create an ARPANET-based sharable design environment, which will be used as a means of exploring computer architecture,language development, and special purpose processor design.

AUTOMATIC PROGRAMMING 5c

Definition and contributing research in automatic programming, including problem acquisition, modeling, and code production. This program has centered on three main activities:

(1) Work with ARPA to help establish the direction and scope of the ARPA program in automatic programming.

(2) Development of a language-independent interface between a user and his programming language which makes available to him the programming environment of Bolt Beranek and Newman's (BBN) LISP.

(3) Formulative work has continued in the comprehension of human dialog and the extraction of knowledge of new problem areas from their descriptions.

COMPUTER SOFTWARE ASSURANCE 5d

Studies and development of methodologies for system software security and protection, including software design concepts, formal program verification, and empirical measurement efforts.

Three separate but complementary approaches are being pursued:

(1) Empirical System Study - focuses on near-term solutions to the requirement to operate computers, with classified and unclassified information simultaneously, in resource sharing mode.

(2) Protection Theory - Directed towards theory through development of:

(a) a basis for more formally describing protection-forms of given protection-mechanisms;

(b) a methodology for abstracting the protection-forms of given protection schemes; and

(c) a framework for the comparison and evaluation of protection schemes themselves.

The inductive and deductive approaches employed have resulted in the beginnings of a taxonomic framework. Byproducts of this subproject are an annotated protection bibliography and a glossary of protection-scheme terminology and jargon.

(3) Program Verification - verifying a computer program means demonstrating that the program is consistent with documentation or statements of what the program will do. Current work is concentrating on providing computer assistance for verifying programs. One operational aid resulting from the group's work, called a verification condition generator, takes as input a program to be verified and also documentation on what the program will do. The output from the program verification generator is a set of mathematical lemmas, called verification conditions. Providing these lemmas demonstrates that the program is consistent with its documentation, and hence a program is verified.

NETWORK-SUPPORTING RESEARCH 5e

Research and Development of packet-switched network use in secure natural communications, including voice, image, and textual data; remote subroutine use, and special studies in network applications for DOD environments.The Network Program consists of the following elements:

Network Conferencing
Transparent Network Communications
DOD Communications Study
Accounting System Study
Data Reconfiguration Service
Portable Terminals

PROGRAMMED AUTOMATION 5f

Definitional studies leading to programmable automation of job shop environments, including impact studies on DOD's procurements and recommendations for development programs required to realize such automated systems. The goals of this project during the past twelve months have been to: 1) evaluate the technological feasibility of significant advancements in computer-based manufacturing systems for discrete product manufacture; 2) evaluate the economic impact on DOD and the U.S. economy derived from implementation of these advancements; and 3) define the development program required to achieve these advancements including areas to be addressed and resources required. Those goals have been achieved.

ISI has conducted several smaller projects related to more immediate DOD needs. These have included a study and comprehensive report proposing a means for total automation of military message services on the island of Oahu; work in the definition and implementation of ARPANET accounting practices; and definition and development of a general-purpose, high quality terminal display and hard copy facility. 5g

ISI has implemented and maintained a major TENEX computing facility in support of Institute projects and other ARPA programs via the ARPANET. This system is now the busiest node (86) on the ARPA Network; operating at full capacity it has attracted some 800 users in its first 8 months of service.

The blend of talents, along with a full-time committment to research by staff, has resulted in the creation of a new institute well suited to contemporary research needs and required accomplishments.

PROTOCOLS
=========

6

No protocol news in this issue. 6a

RESOURCE NEWS
=============

7

Ames Data Communication Changes 7a

ARPANET users at AMES (TSS/360) will benefit from extensive data communications changes. The computation division is installing new data communications equipment to allow high-speed terminal users to send at 15 characters per second and receive at 120 characters per second. The new telephone numbers for access to TSS/360, ARPANET will be announced in the near future in the AMES Computation Division Newsletter, DATA CHANNEL.

.......Extracted from DATA CHANNEL by JI

RJE Users 7b

A new high-speed multiplexor line with 9600 bps service to the CDC 7600 computer at the Lawrence Berkley Laboratory, will result in faster service for RJE sites 2,3,4,10, and 11.

.......Extracted from DATA CHANNEL by JI

CCN Newsletter 7c

UCLA-CCN issued an orientation Newsletter (Vol. II, No. 16, SN(S)-32) dated June 22, 1973. Network users who have not used this site may find this introduction to CCN's facilities of interest and may obtain a copy by writting to: CCN Newsletter, Campus Computing Network (C0012), Math Sciences Addition, Los Angeles, California 90024 or by phoning in a request to: (213) 825-7548.

.....Extracted from CCN Newsletter by JI

UCSB Data Reconfiguration Service

Through RFC 437, NIC 13701, UCSB announces the availability of the Data Reconfiguration Service (DRS) and describes the use of the DRS Time Sharing System. DRS is an experiment in a flexible means for reformatting Network data streams. DRS provides a means for coupling processes with different input/output interfaces, and carrying out user specified transformations on the data passing between them. Samples of representative use of DRS include field insertion, field deletion, variable length string processing, string length computation, field transposition, character packing and unpacking, and character set translations.

..........Ed Faeh - Extracted from RFC by JI

Abstracts of Network Documents

---- abstracted by Mil Jernigan (NIC) 7e

The following Network internal documents are of general interest. Copies may be obtained at Network sites from Network Station Agents.

Dean Meyer, Kirk Kelley (SRI-ARC). RFC 544, Locating On-Line Documentation at SRI-ARC.Stanford Research Institute, Augmentation Research Center, Menlo Park, California 94025. 13 July 1973. 1p. NIC 17782.

> A description of how to use the NIC LOCATOR and USERGUIDES ARCLOCATOR files to find system documentation.

Dean Meyer (SRI-ARC). RFC 543, Network Journal Submission and Delivery,Stanford Research Institute, Augmentation Research Center, Menlo Park, California 94025. NIC 17777. 13 July 1973. 8p.

> Announcement of the implementation of a Network Journal Submission and Delivery System, allowing use of the NIC's NLS Journal system without entering NLS.

Nancy Neigus (BBN-NET) RFC 542, File Transfer Protocol. 12 July 1973. 50p. NIC 17759.

> The new version of the File Transfer Protocol. Obsoletes 10596 and 11357.

R. G. Merryman (UCSD-CC). RFC 532, The UCSD-CC Server-FTP Facility. 12 July 1973. 3p. NIC 17451.

Abhay Bhushan (MIT-DMCG) RFC 530, A Report On the SURVEY Project, 22 June 1973. 9p. NIC 17375.

> A report on (1) the status of the SURVEY Project and current data; (2) to inform the ARPANET community of the services offerred related to this project; (3) to report on future plans, and (4) to ask for suggestions and improvements. Updates 9259 and 17048.

J. McQuillan (BBN-NET). RFC 528, Software Checksumming in the IMP and Network Reliability. 20 June 1973. 11p. NIC 17164.

> Description of some recent modifications to the IMP and TIP programs to give increased reliability. Hardware changes are minor, but they are logically noteworthy and are explained here in some detail.

James E. White (SRI-ARC) RFC 524, A Proposed MAIL Protocol. 13 June 1973. 44p. NIC 17140.

A proposed specification for handling MAIL in the ARPANET, which is much richer than the present protocol in terms of flexibility and functions.

Mark Dowson (MIT-AI). How To Get On To the System - A Guide to the A.I. Lab Timesharing System for New Users, MIT-AI Memo 215, April 1971. 19p. NIC 16577.

Intended to assist new users in use of MAC-AI system. Presents some simple steps for making and editing files, getting printouts, making microtapes and so on. More detailed documentation is referenced.

John L. White. Massachusetts Institute of Technology, Project MAC, Artificial Intelligence Laboratory, Cambridge, Massachusetts. An Interim LISP User's Guide, MIT-AI Memo 190, NIC 16575. March 1970. Separately paged.

MACLISP is a descendant of the first operational program ever written for the DEC PDP-6 computer, an interpreter and minimal LISP system. Substance of this report is to initiate the naive LISP user into the intricacies of the system at Project MAC-AI Lab.

<USER-PROGS>-CONTENTS, A Descriptive List of User Programs Available in Directory <USER-PROGS>, Stanford Research Institute, Augmentation Research Center, Menlo Park, California. 4 June 1973. 6p. NIC 16510.

A list of the user programs available in <USER-PROGS> as NLS subprograms at SRI-ARC, their types, uses, types of links required, and brief instructions for their use.

James E. White (SRI-ARC). RFC 510, Request for Network MAILBOX Addresses. 30 May 1973. 3p. NIC 16400.

Description of scheme for online, offline, and MAILbox delivery of Network Journal articles and messages.

Bradley A. Reussow (HARVARD) RFC 499, Harvard's Network RJE, 1 April 1973. 7p. NIC 15716.

RJE was designed to provide Network users with the facility for submitting jobs to remote servers through the ARPANET and retrieving results, using Harvard's PDP-10. At present RJE is implemented only for UCLA, therefore all examples apply to that installation.

PLANS 8

No contents in this issue. 8a

OTHER NEWS 9

New TIPS and IMPS 9a

The following table provides the most recent estimates for the installation of new TIPS and IMPS. Questions regarding the schedule should be directed to the Range Measurement Laboratory, Col. Ed. Schelonka (SNDMSG to SCHELONKA@usc-isi).

Site	Type	Installation Date
Norway (Kjeller)	Tip	Installed communications being debugged
London	Tip	Installed but unconnected, awaiting comm. service.
Moffett	Imp	20 Sept. 1973
LLL	Tip	20 Sept. 1973
MIT-2	Imp	20 Sept. 1973
Tymshare	Imp	30 Aug. 1973
Rutgers	Tip	8 Nov. 1973
Wright-Patterson	Tip	11 Oct. 1973
Eglin AFB	Imp	Jan. 1974
Kirtland (AFWL)	Tip	7 Mar. 1974

ILLIAC-IV 9b

ILLIAC News

Although the ILLIAC IV passed a minimum acceptance test in December, considerably more effort is necessary to achieve the reliability and maintainability required in an operational system. Considerable progress in software has been made however. This includes:

1. Implementation of A Control Language (ACL) which provides communication between the user and the system.

2. Development of a batch operation mode.

3. Expansion and enhancement of diagnostic programs.

4. Improvement of the error handling capability of the operating system.

The Institute for Advanced Computation (ILLIAC IV Project Office) has formed a User Support Group headed by Clark Oliphant (415) 735-0035 to handle user problems, as well as providing documentation and training support for the Sponsors.

.......Extracted from DATA CHANNEL, Ed.

User Progress

Four of the users who have attempted to run on the Array using the initial version of the ACL system are:

NASA-Ames, represented by Margaret Covert, is running several programs, the most important of which is the shuttle program. Two small programs have run to completion with correct results. Other programs have not done as well due to hardware problems.

The University of Illinois, represented by Marv Graham, is running two programs - a Fast Fourier Transform and an ERTS program. Both programs have run to completion but have not yet produced correct results.

The Lawrence Livermore Laboratory, represented by Tad Kishi, is running a number of small programs which will eventually be combined into a single large program. Two very small programs ran to completion and produced correct results. The others have detected various errors in the system and thus do not yet give correct results.

RAND is represented by Bob Mobley who is running a weather program. He is attempting to time a simulation of a two-day time interval. The program has run to completion with the Array in non-overlap mode, but has not yet run to completion in overlap mode. Actual input data is not currently being used so the results of the completed calculation are not verifiable.

....Extracted from the Institute for Advanced Computation Newsletter, FOURUM, Ed..

ILLIAC-IV System User's Guide

The ILLIAC IV System User's Guide has been released to active users. Requests for copies should be addressed to: Marcelline C. Smith, Manager, Program Development Office, Institute for Advanced Computation, NASA, Ames Research Center, Mail Stop 233-14, Moffett Field, California 94035.

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/No contributions received for this section yet/ 10a